

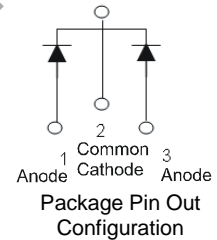
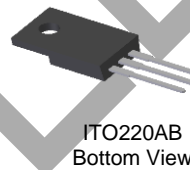
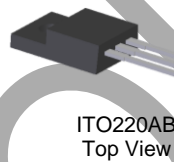
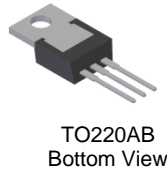
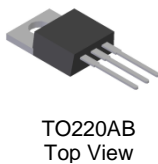
**OBSOLETE – PART DISCONTINUED**

## Features

- Low-Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier (SBR<sup>®</sup>) Technology
- Soft, Fast Switching Capability
- Lead-Free Packages: TO220AB, ITO220AB
  - **Totally Lead-Free; RoHS Compliant (Notes 1 & 2)**
- Lead-Free Packages, Available in “Green” Molding Compound: TO220AB, ITO220AB
  - **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. “Green” Device (Note 3)**
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>

## Mechanical Data

- Package: TO220AB, ITO220AB
- Package Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>Ⓜ</sup>
- Weight: TO220AB – 1.85 grams (Approximate)  
ITO220AB – 1.65 grams (Approximate)



## Ordering Information (Notes 4 & 5)

Part Number	Package	Packing	
		Qty.	Carrier
SBR2040CT	TO220AB	50 Pieces	Tube
SBR2040CT-G	TO220AB	50 Pieces	Tube
SBR2040CTFP	ITO220AB	50 Pieces	Tube
SBR2040CTFP-G	ITO220AB	50 Pieces	Tube
SBR2040CTFP-JT-G	ITO220AB (Alternate)	50 Pieces	Tube

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
  5. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR2040CT-G.

## Marking Information



SBR2040CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 24 = 2024)  
WW = Week (01 to 53)



SBR2040CTFP = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 24 = 2024)  
WW = Week (01 to 53)

**Maximum Ratings (Per Leg)** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current Per Device (Per Leg)	I <sub>o</sub>	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	120	A
Peak Repetitive Reverse Surge Current (2µs-1kHz)	I <sub>RRM</sub>	2	A
Isolation Voltage (ITO220AB Only) From Terminal to Heatsink t = 3sec	V <sub>AC</sub>	2000	V

**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	R <sub>θJC</sub>	—	°C/W
Package = TO220AB		2	
Package = ITO220AB		4	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics (Per Leg)** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	—	0.53 0.48	V	I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	0.5 100	mA	V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C V <sub>R</sub> = 40V, T <sub>J</sub> = +125°C

Note: 6. Short duration pulse test used to minimize self-heating effect.

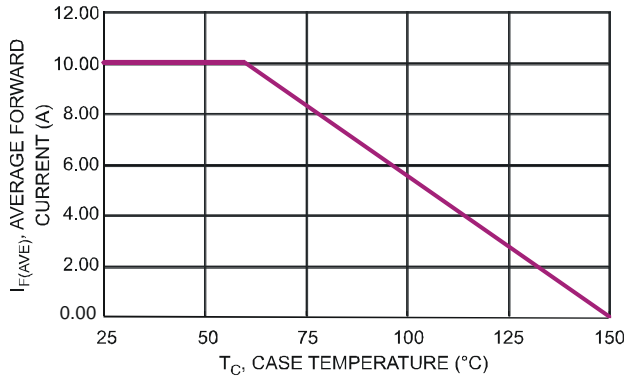


Figure 1 Current Derating Curve, Per Element

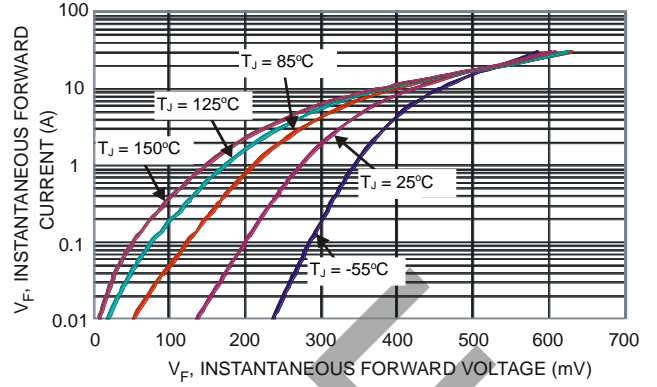


Figure 2 Typical Forward Characteristics, Per Element

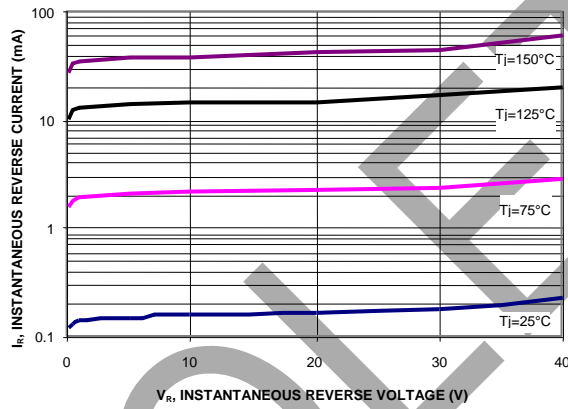
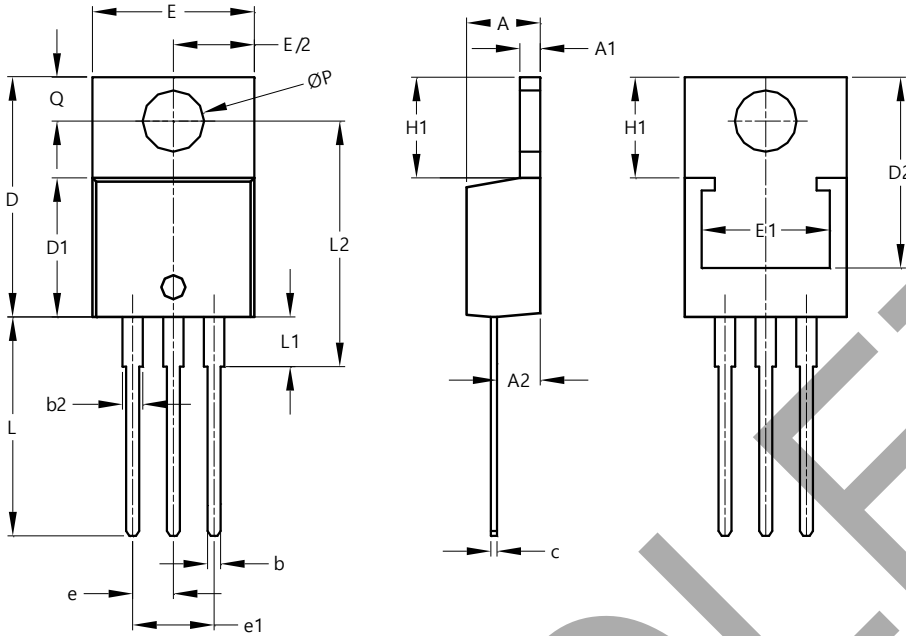


Figure 3 Typical Reverse Characteristics, Per Element

**Package Outline Dimensions**

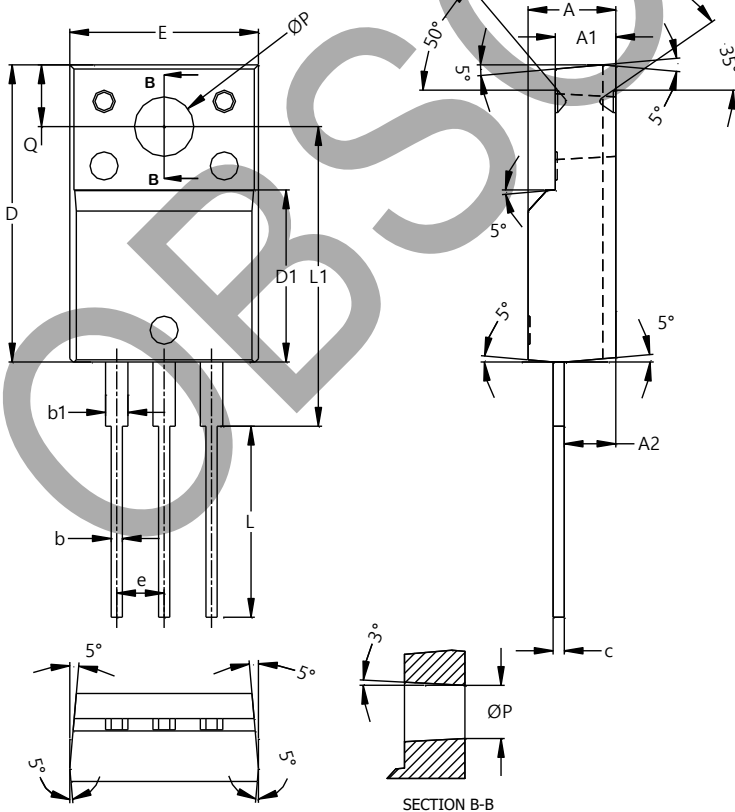
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**TO220AB**



TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	4.42	-
L2	15.80	17.51	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
All Dimensions in mm			

**ITO220AB**



ITO220AB			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	3.04	3.44	3.24
A2	2.56	2.96	2.76
b	0.50	0.75	0.60
b1	1.10	1.35	1.20
c	0.50	0.70	0.60
D	15.67	16.07	15.87
D1	8.99	9.39	9.19
E	9.91	10.31	10.11
e	--	--	2.54
L	9.45	10.05	9.75
L1	15.80	16.20	16.00
P	2.98	3.38	3.18
Q	3.10	3.50	3.30
All Dimensions in mm			

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